

NITCHI

ELECTRIC CHAIN HOISTS
MH-5 / MHT-5 / MHC-5

SERVICE MANUAL No.1

Contents

1. Precautions	1
2. Inspection & Replacement/Adjustment	1
2 – 1. Load chains	1
2 – 2. Hooks	1
2 – 3. Electromagnetic brake	2
2 – 4. Lubricant oil	4
3. Disassembly	5
3 – 1. Disassembly procedures	5
3 – 2. Electromagnetic brake - Inspections during disassembly	8
4. Assembly	9
4 – 1. Frame section	9
4 – 2. Gear section	11
4 – 3. Motor section (incl. Electromagnetic brake)	15
4 – 4. Limit switch section	17
4 – 5. Electrical parts & Wiring	18
4 – 6. Top hook assembly	20
4 – 7. Load chain, Bottom hook assembly, Stop holder & Chain bucket assembly	21
4 – 8. Lubricant oil pouring	22
5. Spare parts list	23

1 . Precautions

- Always cut off the power supply whenever the electric chain hoist is attempted for maintenance or repair. Be sure to conduct maintenance or repair without load.
- Always remove dirt from gears, load sheave, load chain and other related parts after disassembly.
- Never attempt to clean nor fix the bearings. Replace if it is damaged.
- Never reuse deformed, worn or corroded parts. Always replace them with new ones.
- Never use other than NITCHI genuine parts.

2 . Inspections & Replacement/Adjustment

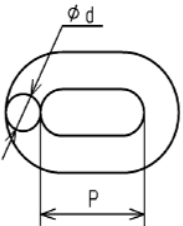
2 – 1 . Load chains

Measure dimensions ϕd (link diameter) and P (link pitch) as shown in Table 1. The load chain must be replaced if it falls into any of the following state.

1. Dimension "d" falls below the limit dimension given in Table 1.
 2. Dimension "P" exceeds the limit dimension given in Table 1.
- Also, replace entire load chain if any link is damaged, deformed or rusty.

Table 1 Dimensions, Load chain

(mm)

	Rated load (t)	Type	ϕd		P		Discard limit pitch per 10 links
			Std.	Limit	Std.	Limit	
	0.5~1	$\phi 7.1$	7.1	6.7	21.2	21.8	216
	2~5	$\phi 11.2$	11.2	10.6	34.3	35.3	350

(Remark): In case wear is found on the load chain, please also check (p/B4) Load sheave and (p/B6) Load chain guide as they are the counterparts each other.

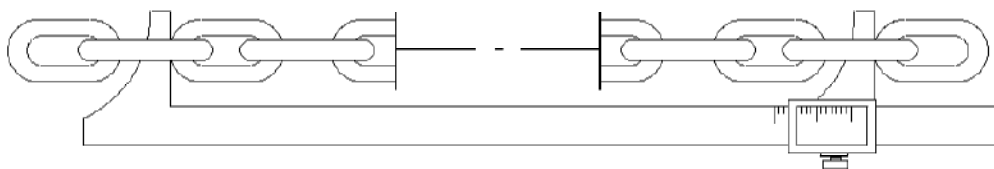


Fig. 1 How to measure pitch dimension per 10 links with a caliper.

2 – 2 . Hooks

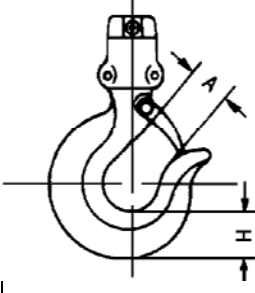
Measure dimension "A" for hook opening and dimension "H" for the thickness as per Table 2.

Replace the hook if it falls into any of the following conditions.

1. Dimension "A" exceeds the standard dimension given in Table 2.
 2. Dimension "H" falls below the limit dimension given in Table 2.
- Also, replace with new one if a crack is found on the part.
3. The hook does not swivel on the level smoothly.

Table 2 Dimensions, Hook

(mm)

	Top hook			Bottom hook		
	Rated load (t)	A	H		A	H
		Std.	Std.	Limit	Std.	Std. Limit
	0.5	32	31	29.5	23	23 21.9
	1				28	27 25.7
	2	33	35	33.3	33	35 33.3
	2.5, 3	41	42	39.9	41	42 39.9
	5	48	55	52.3	48	55 52.3

2 – 3. Electromagnetic brake

• Electromagnetic brake for 3-Phase models (MH-5 & MHT-5)

Measure the dimension of the brake clearance between (p/C59-4) Armature and (p/C59-5) Brake coil (Dimension A as per Fig 2 below) with a thickness gauge. The brake needs adjustment according to the procedures through 1-4 as given below if the measured value is 0.8mm or over.

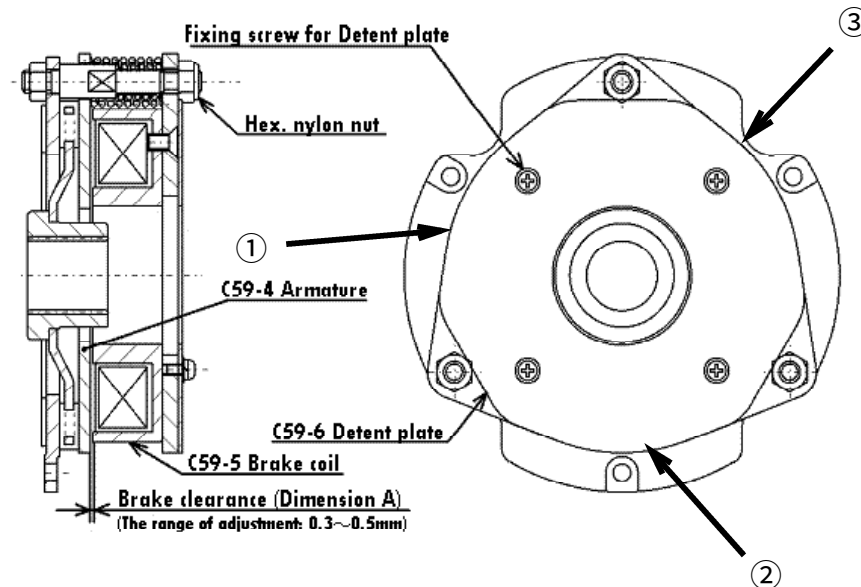


Fig.2 Electromagnetic brake for 3-Phase models

1. Loosen Fixing screws for Detent plate and remove (p/C59-6) Detent plate.
2. Screw up Hex. nylon nut to adjust the clearance (Dimension A) to be between 0.3mm and 0.5mm while checking with a thickness gauge. (The arrowed points ①, ②, ③ show the measuring positions for equal setting.)
3. Attach (p/C59-6) Detent plate after the adjustment. Turn the hex. nylon nuts so that either their corners or sides touch the side of Detent plate. (The corners of the nuts are in touch with Detent plate in the above figure.)
4. Fix Detent plate with Fixing screws.

• Electromagnetic brake for 1-Phase model (MHC-5)

Measure the dimension of the brake clearance between (p/C59-4) Armature and (p/C59-5) Brake coil (Dimension A as per Fig 3. below) with a thickness gauge. The brake needs adjustment according to the procedures through 1-8 as given below if the measured value is 0.8mm or over at the condition the brake is being mounted on the hoist (or, 1.8mm or over if the brake is set loose.)

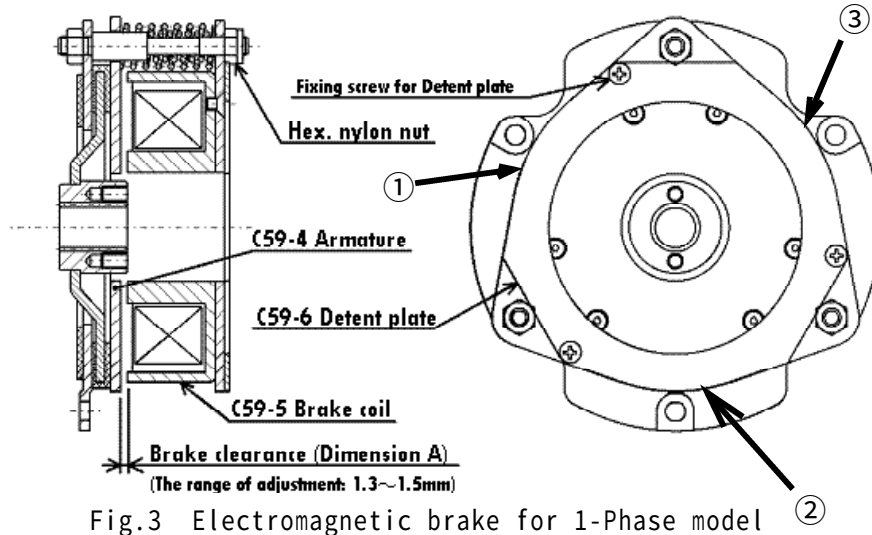


Fig.3 Electromagnetic brake for 1-Phase model

1. Loosen Fixing screws for Detent plate and remove (p/C59-6) Detent plate.
2. Screw up Hex. nylon nut to adjust the clearance (Dimension A) to be between 1.3mm and 1.5mm while checking with a thickness gauge. (The arrowed points ①,②,③ show the measuring positions for equal setting.)
3. Attach (p/C59-6) Detent plate after the adjustment. Turn the hex. nylon nuts so that either their corners or sides touch the side of Detent plate. (The corners of the nuts are in touch with Detent plate in the above figure.)
4. Fix Detent plate with Fixing screws.
5. Lace brake lead-wires through (p/C49) Pipe for lead wire, and outfit the hoist with the brake assembly using M6 Cap bolts.
6. Screw up (p/C20) Adjusting nut for brake to the bottom, then turn it reversely for one complete turn (for 1mm pitch).
7. Fasten (p/C555) Cap bolts. If the holes of (p/C20) Adjusting nut for brake and the tap holes of (p/C4) Brake wheel do not align each other, match the holes by turning C20 clockwise or counterclockwise within the turning range of max. 45°.
8. Screw up (p/C719) Bearing U nut to complete the brake installation.

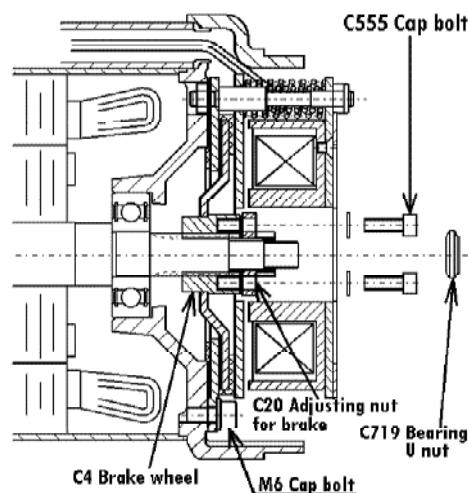


Fig.4 Electromagnetic brake installation for 1-Phase model

2 – 4 . Lubricant oil

1. The hoist is filled with lubricant oil at initial delivery, hence it is not necessary to add oil for the first run. Make a small hole on (p/A505) Oil cap as illustrated on the right, so that the internal pressure of (p/A1) Gear box does not increase during operation.

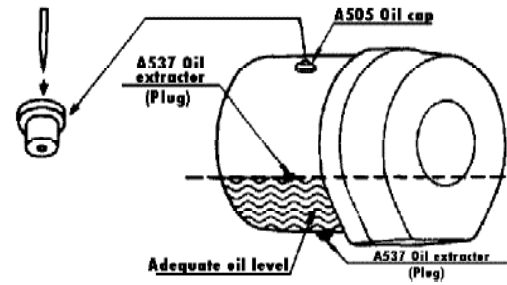


Fig. 5 Lubricant oil

2. Check the oil level at periodic inspection. Add oil in (p/A1) Gear box according to Table 3 below if it is at the lower level. Runout or short of oil causes abnormal noise in the gear box and/or malfunction of the mechanical brake. Table 3 provides recommended oil type and quantity per model/capacity to replace or replenish the oil.

Table 3 Oil type & quantity

3. Lubrication on Load chain
Make sure the load chain is always lubricated.
Any machine oil or gear oil is recommendable.

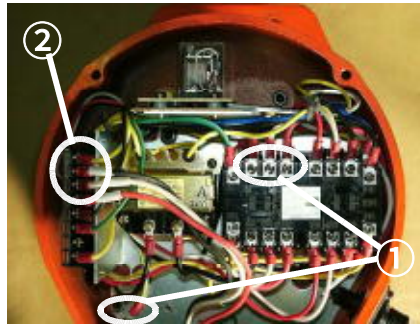
MH-5·MHT-5 MHC-5 0.5~1t	MH-5 2~5t	MHT-5 2~5t
Diesel oil CD #30(API) 0.8 liters	Diesel oil CD #30(API) 1.5 liters	SHELL Tonna oil 1.5 liters

3. Disassembly

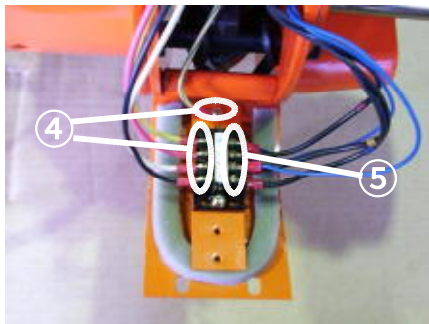
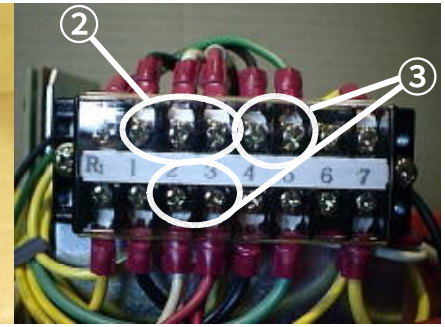
3 – 1. Disassembly procedures



1. Unjoint (p/B32) Chain bucket pin and the hanging chain and remove (p/B27) Chain bucket.



2. Take off (p/C12) Switch cover and disconnect the wirings of ①(p/C563) Power source cable, ②(p/C564) Pendant control cable and ③(p/C635) Limit cable. Bundle each group of wires at this stage. It helps to ease your job.



3. Open (p/B30-2) Body cover B, and disconnect the lead-wires*.

*④ : Wires from Switch holder section
⑤ : Black wires ... Wires from the motor.
Blue wires ... Wires from the brake.



4. Strip the electrical components.



5. Unscrew (p/A537) Oil extractor (Plug) located in the bottom of (p/A1) Gear box and drain the oil. To open (p/A505) Oil cap will make it faster.



6. Pull out (p/B18) Top hook pin and dismantle (p/D1) Top hook assembly from the frame section.



7. Loosen (p/A559) Cap bolts w/ seal and take off (p/A29) Switch holder. Always replace (p/A559) Cap bolts with seal with the new ones.



8. Remove (p/A560) Gasket for A29.



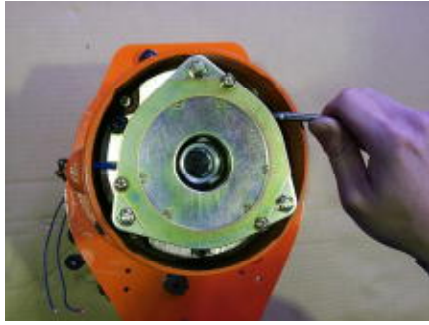
9. Disassemble (p/C27) Limit switch cover.



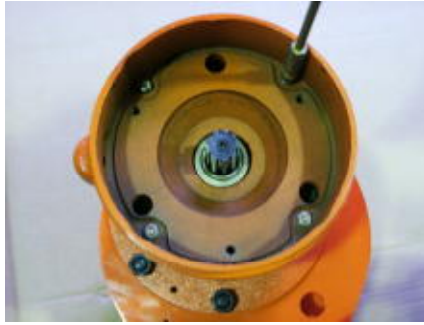
10. Disconnect (p/C32) Limit switch plate.



11. Take off (p/C1) Motor cover.



12. Dismantle (p/C59) Brake unit.



13. Loosen (p/C664) Through bolts and remove (p/C45) Shield.



14. Take off (p/C49) Pipe for lead wire and (p/C3) Stator for motor.



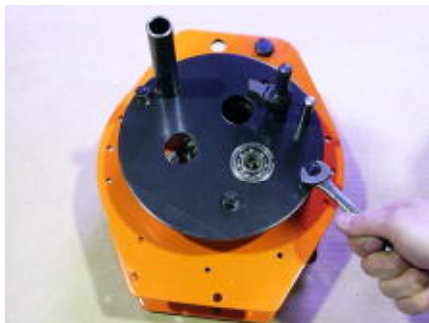
15. Pull out (p/A2) Pinion shaft (w/ Rotor).



16. Remove (p/A1) Gear box.



17. Disengage whole the mechanical brake set and the third pinion set. Be careful of losing the needles of (p/A508) Needle bearing for 2-5t capacities.



18. Unfasten (p/A556) Nut and detach (p/A28) Brake supporting plate.



19. Pick up (p/B1-4) Stay pipe A.



20. Remove (p/A510) Retaining ring and disengage (p/A7) Load gear.



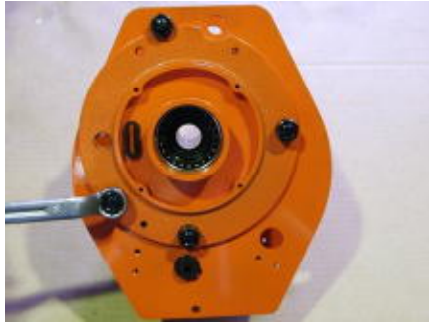
21. Pull out (p/B5) Collar for B4 Load sheave.



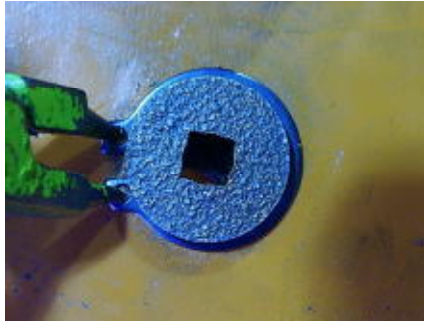
22. Detach (p/B25) Chain limit stop, (p/D8) Bottom hook assembly and (p/B536) Tail springs from the load chain.



23. Remove (p/B26) Load chain.



24. Unfasten (p/B538) Nut and (p/C525) Cap bolt, to separate (p/C44) Motor flange and (p/B35) Stay pipe B <0.5t> or (p/B1-3) Stay bolt B <2-5t> from (p/B29) Motor-side plate and detach (p/B1) Gear-side plate.



25. Release (p/B566) Retaining ring and remove (p/B36) Limit lever.



26. Take off (p/B28) Hanging plate for (p/B27) chain bucket, (p/B537) Springs for B6 then (p/B10) Handle.



27. Dismantle (p/B6) Load chain guide.



28. Detach (p/B503) Oil seal for B4, (p/B28) Hanging plate for B27 then (p/B4) Load sheave.

3 – 2. Electromagnetic brake unit-Inspections during disassembly

Fig.6-a,6-b shows disassembled (p/C59) Electromagnetic brake unit and the list of its components.

Measure (p/C4) Brake wheel thickness "t" and replace with new one if it falls to or below the limit dimension as given in Table 4 below.

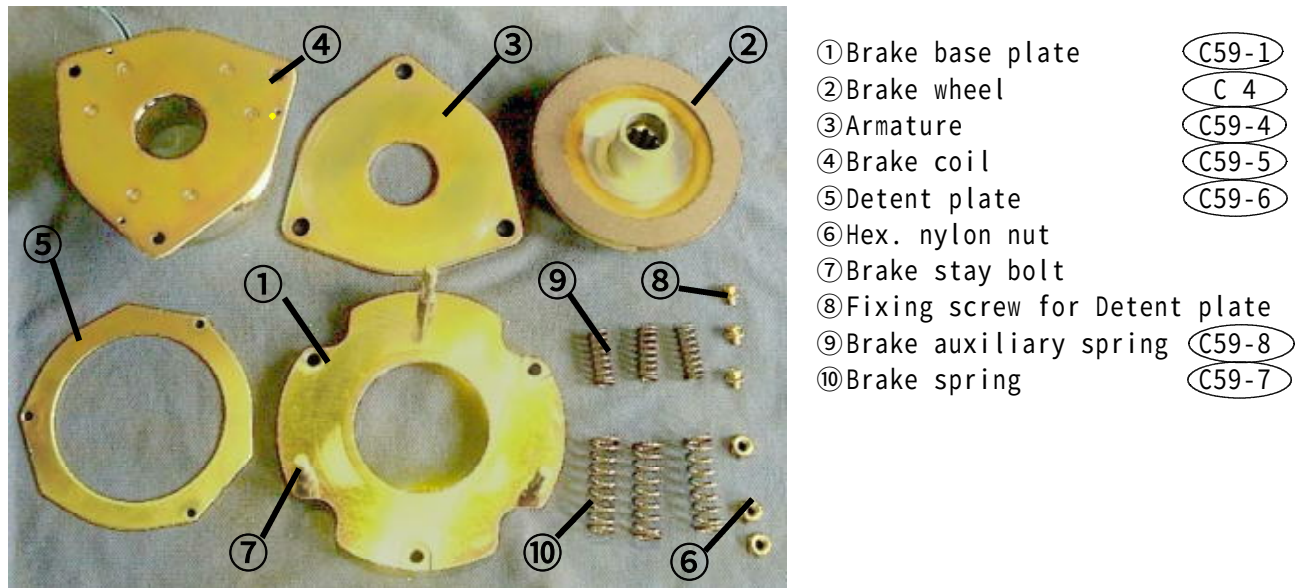


Fig. 6-a MH-5 & MHT-5

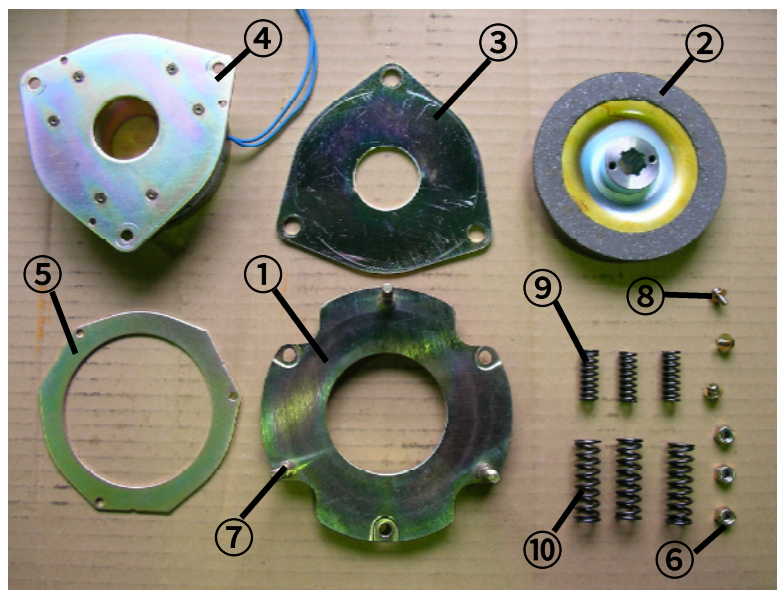
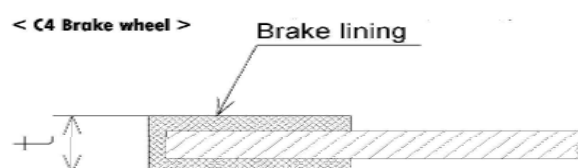


Fig. 6-b MHC-5

Table 4 Brake wheel dimension t (mm)

	MH-5 MHT-5	MHC-5
Std.	7	6
Limit	6	5



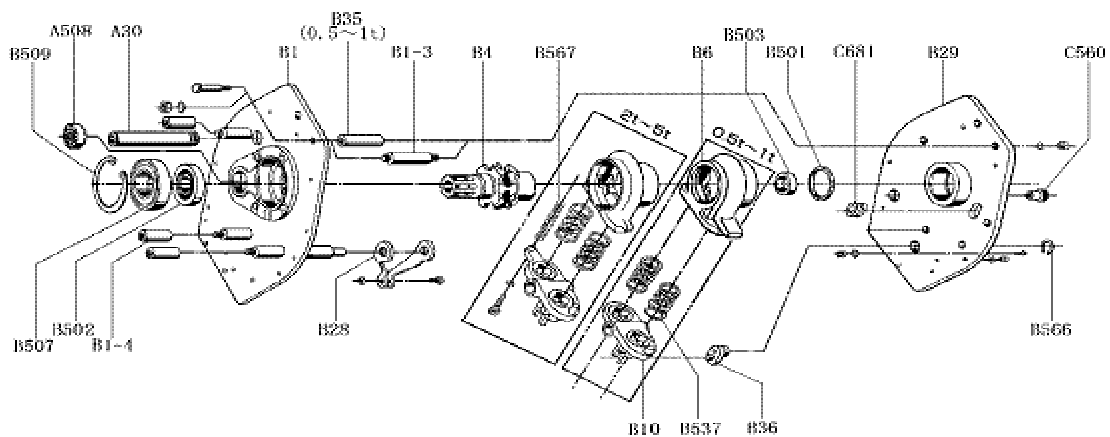
Remark: Never attempt to disassemble ① Brake base plate, ⑦ Brake stay bolt and its hex. nut apart. They are connected with locking agent.

4. Assembly

4 – 1. Frame section

Please replace the parts with new ones if they fall into the following conditions.

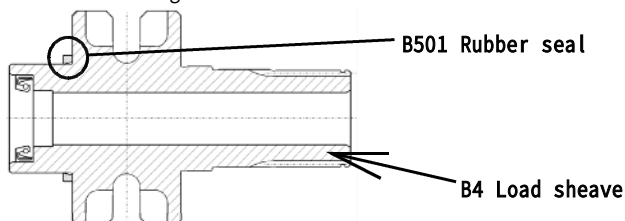
1. Gear-/Motor-side plates (p/B1,B29) : Bearings (p/B507,508) rattle on the holes, or wear or deformation on the hole for (p/B18) Top hook pin is found.
2. Load sheave (p/B4) : Either wear, deformation or flaws are found at any of shank, spline or chain pocket section. Or, whenever (p/B26) Load chain is to be replaced.
3. Oil seals (p/B502,B503) : Wear or flaws are found whereat they touch with (p/B4) Load sheave or (p/A2) Pinion shaft (w/ Rotor).
4. Load chain guide (p/B6) : Wear or deformation is found on its internal groove. Or, whenever (p/B26) Load chain is to be replaced.
5. Handle (p/B10) : Deformation or wear is found on its movable section or on the crossed slit.



Assembly procedures



1. Set (p/B4) Load sheave with (p/B503) Oil seal to (p/B1) Gear-side plate, then fit (p/B501) Rubber seal in the position as the sketch given below.
2. Fit one of two (p/B28) Hanging plates for B27 on the stay bolt located on (p/B1) Gear-side plate as the above photo.
3. Build in (p/B6) Load chain guide. Be careful of its position in relation to the stay bolt. (See white circle above.)





4. Grease to the stay bolt beneath (p/B6) Load chain guide and furnish (p/B10) Handle over it.



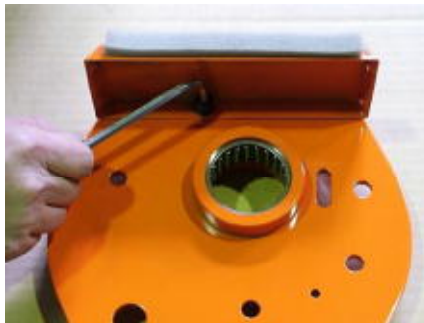
5. Put 2 pcs. (p/B537) Springs for B6 in the position as above.



6. Put also (p/B567) Supporting spring with (p/B568) Cap bolt in case of a 2~5t capacity unit.



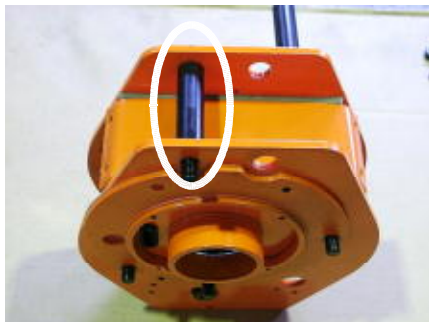
7. Put the rest of (p/B28) Hanging plates for B27 to the stay bolt. Then grease to the fork plate of (p/B10) Handle and set (p/B36) Limit lever over it.



8. Fix (p/B29-2) Body cover A on (p/B29) Motor-side plate with (p/B572) Cap bolt.



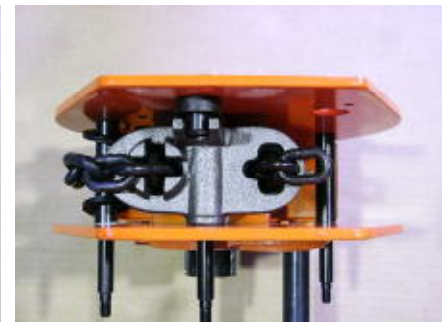
9. Join (p/B1) Gear-side plate and (p/B29) Motor-side plate, then retain (p/B36) Limit lever with (p/B566) Retaining ring. In case of a 2~5t capacity unit, put (p/B1-3) Stay bolt B into the position of (p/B35) Stay pipe B in the step 10 as given below.



10. Set (p/B35) Stay pipe B between the plates and insert (p/B574) Bolt through the pipe in case of a 0.5-1t capacity unit.



11. Tighten up (p/B538) Nuts. (4 points)



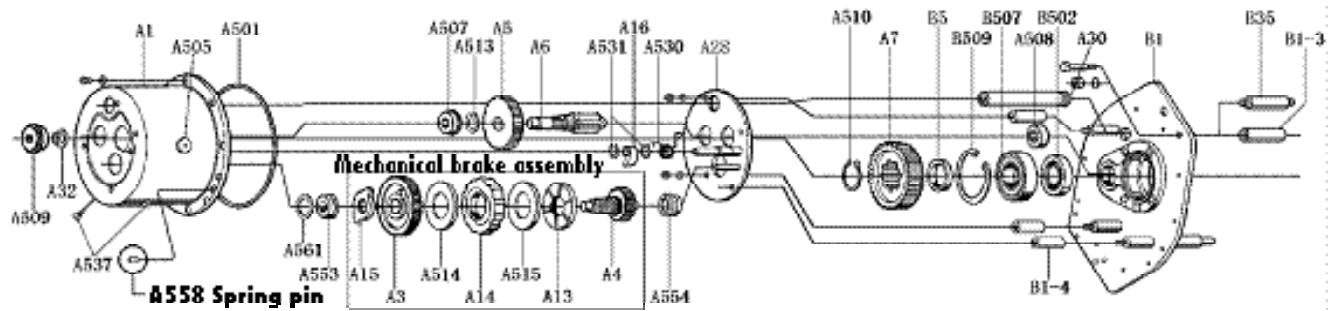
※1 Insert pilot chain from the loose-end side. Be sure the first link to be inserted is a
 ※2 horizontal link for the single chain-fall unit while the first link is a vertical link in case of a double chain-fall unit.
 Feed the chain to the load-side turning (p/B4) Load sheave by the fingers.

- ※1 Pilot chain . . . A short preliminary link chains to be set through the load sheave in advance, in order to guide the practical load chain at chaining. Prepare odd numbers of the links.
- ※2 Horizontal link . . . The load chain links which lie in the load sheave pockets in horizontal aspect.
- ※3 Vertical link . . . The load chain links which set to the load sheave pockets in perpendicular aspect.

4 – 2 . Gear section

Replace the parts with new ones if they fall into the following conditions.

1. Any wear or flaw is found on the gear teeth.
2. Rattling or any damage is found the bearings (p/A507,A508,A509,A553,A554,B507).



Assembly procedures



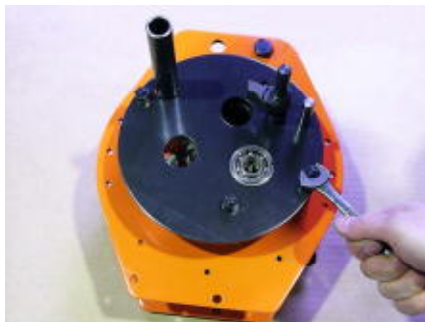
1. Insert (p/B5) Collar for B4 to the load sheave.



2. Set (p/A7) Load gear to (p/B4) Load sheave and clamp it with (p/A510) Retaining ring.
*¹Be careful of its aspect.



3. Put (p/B1-4) Stay pipes A over the Stay bolts, so that their chamfered end faces (p/B1) Gear-side plate.



4. Fix (p/A28) Brake supporting plate with 3 (p/A556) Nuts.



5. Build the third pinion assembly in the position. Clamp the gear with (p/A513) Retaining ring.



6. *³Equip the mechanical brake assembly and catch a ratchet tooth with (p/A16) Pawl properly.



7. Furnish the third pinion and the mechanical brake assemblies with (p/A507,A553) Ball bearings respectively.



8. For MH-5/MHT-5 0.5-1t and MHC-5, clamp (p/A553) Ball bearing on the mechanical brake with (p/A561) Ring for Bearing.



9. Put (p/A501) O-Ring on (p/A1) Gear box with bond.



10. Align (p/A1) Gear box with
(p/B1) Gear-side plate using
(p/A558) Spring pins, then fix
with (p/A519, A562) Cap bolts.

※² A562 is to fix (p/B30-1,B30-2)
Body covers B and is different
from A519 in size.

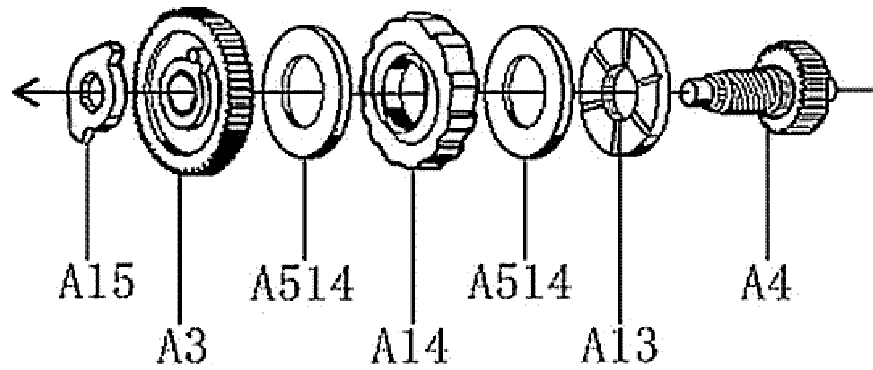
※ 1 (p/A7) Load gear aspect:

0.5~1t capacity ... The depressed side of the gear faces the (p/A28) Brake supporting plate.
2~5t capacity ... Side of the thicker spline flange faces the (p/A28) Brake supporting plate.

※ 2 Size of (p/A562) Cap bolts to fix (p/B30-1,B30-2) Body covers B.

MH, MHT, MHC 0.5~1t	M6×18 2pc.
MH 2~3t MHT 2~2.5t	M8×18 2pc.
MH, MHT 5t	M8×18 1pc.

※Mechanical brake assembly



1. Follow procedures through ① to ⑦ as the above photos.

- At procedure ⑦, screw up (p/A3) Pinion gear to the bottom first, then insert (p/A15) Check washer. Be careful of its arm's position. The arm of Check washer hits the projection of the pinion gear when it gets loose, and it stops the rotation.

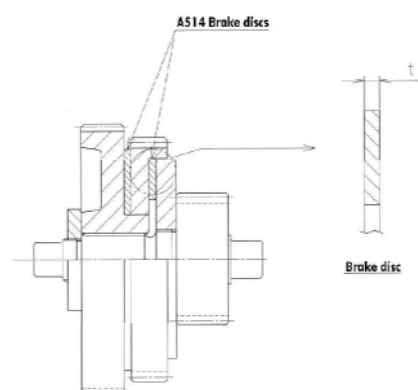
- Either face of (p/A15) Check washer can be used.

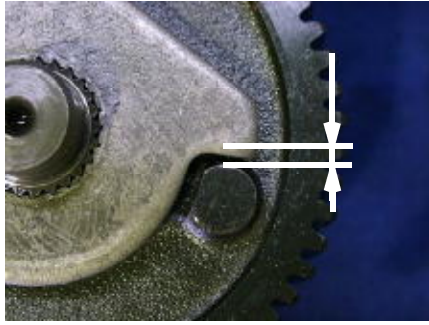
- Oil (p/A514) Friction discs in advance for assembly.

- Replace (p/A514) Friction discs with new ones when they wear at thickness (t) over the limit dimension as given below.

(p/A514) Friction discs dimension

	Thickness t (mm)
Std.	3
Limit	2.4



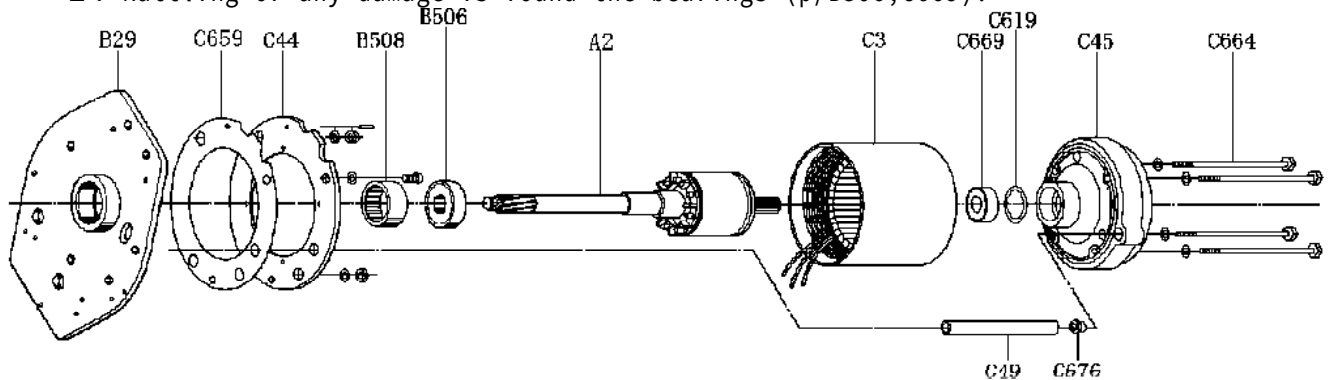


2. Adjust the clearance between Check washer arm and the projection of Pinion gear to 1mm or less by meshing (p/A15) Check washer on the different threads of (p/A4) Second pinion gear and/or by turning over Check washer to the other face.

4 – 3 . Motor section (incl. Electromagnetic brake)

Replace the parts with new ones if they fall into the following conditions.

1. Any wear is found on the helical gear or the spline portion of (p/A2) Pinion shaft (w/ Rotor).
2. Rattling or any damage is found the bearings (p/B506,C669).



Assembly procedures



1. Set (p/B506) Ball bearing to (p/B29) Motor-side plate. Also, fit (p/C681) Bushing for motor lead wire and (p/C560) Blind bushing in each position.



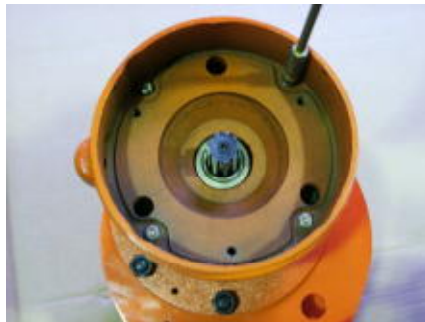
2. Insert (p/A2) Pinion shaft (w/ Rotor) to (p/B29) Motor-side plate. Be sure to set it to the bottom.



3. Attach (p/C3) Stator for motor while passing the motor lead wires through (p/C681) Bushing for motor lead wire on the plate. Be careful not to pinch the wires between the plate and the stator.



4. Align (p/C3) Stator for motor using (p/C664) Through bolt on its location. Be careful of the motor-lead wires and take off the bolt when alignment is done.



5. Set (p/C49) Pipe for lead wire on (p/B29) Motor-side plate. Furnish (p/C45) Shield with (p/C619) Wave washer [(p/C670) Rubber washer for MHC-5] and (p/C669) Ball bearing, then mount it over (p/C3) Stator for motor. Align (p/C45) Shield and fix it with (p/C664) Through bolts.



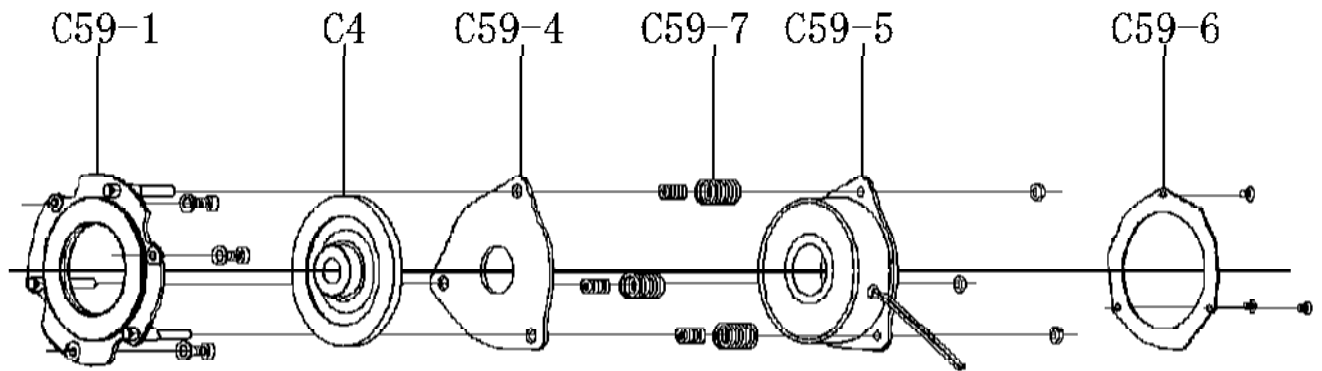
6. Lace the brake lead wires through (p/C49) Pipe for lead wire and fix *(p/C59) Brake unit to the motor section with Hex. socket cap bolts.



7. Fix (p/C1) Motor cover with (p/C524) Screws.

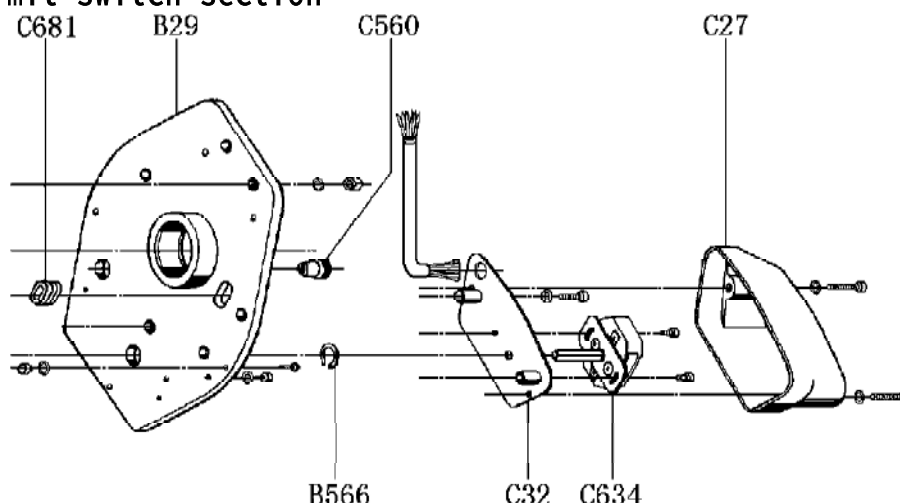
※Electromagnetic brake unit assembly

Please follow as illustrated below. Be sure to align both the center of (p/C4) Brake wheel and (p/C59-1) Brake base plate in assembly.



Refer to Section 2-3. for the brake clearance inspection & adjustment.

4 – 4 . Limit switch section



Assembly procedures



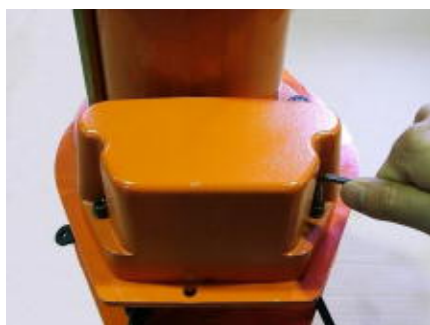
1. Set (p/C634) Limit switch at the neutral position by turning the key shaft so that its arrowed side meets the arrow on the plate.



2. Fit (p/C32) Limit switch plate with (p/C634) Limit switch so that the labeled side of the switch faces up. Then fix with (p/C626) Screws to parallelize the upper side of the switch body and the side of the key shaft as the above photo.



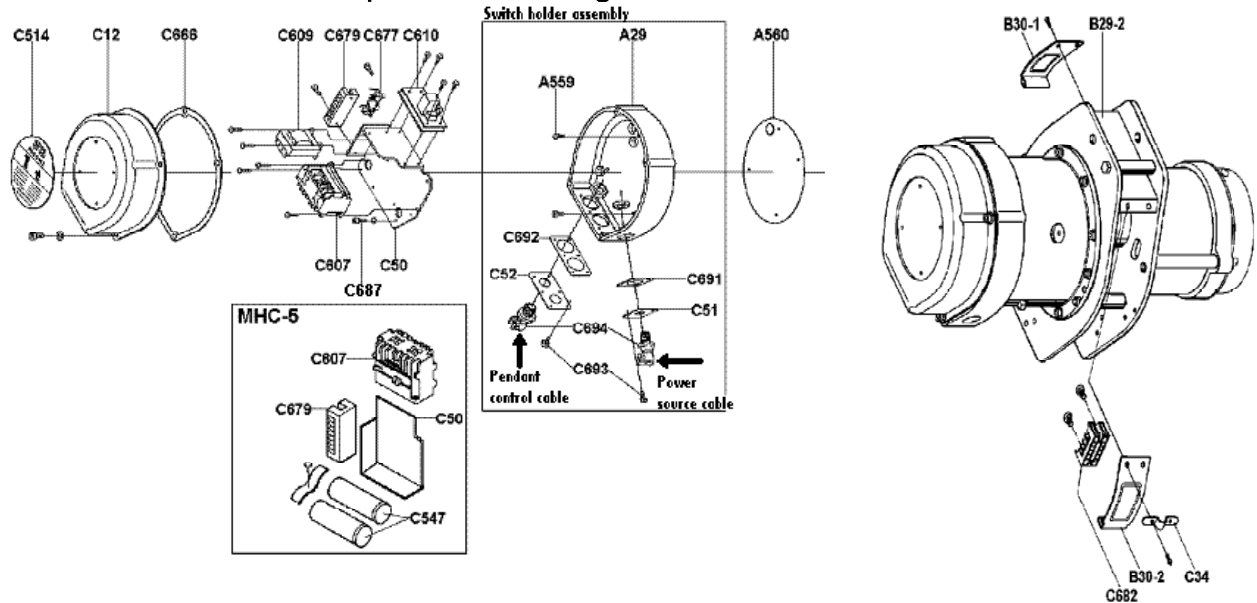
3. Connect (p/C32) Limit switch plate to (p/B29) Motor-side plate with (p/C630) Cap bolts, and pass (p/C635) Limit cables through (p/C560) Blind bushing to the middle of the side plates.



4. Attach (p/C27) Limit switch cover.

※Test both the limits for up and down direction with (p/B10) Handle. If only one side of the limits operates, make adjustment by changing the angle of the limit switch body over the slits on its fin plate with (p/C626) screws. Make sure both sides of the limit functions properly.

4 – 5 . Electrical parts & Wiring



Assembly procedures



1. Outfit (p/A2) Pinion shaft with (p/A32) Bearing bush in case of MHT 0.5~1t or MHC-5 before procedure 2. in the right.



2. Outfit (p/A2) Pinion shaft with (p/A509) Ball bearing.



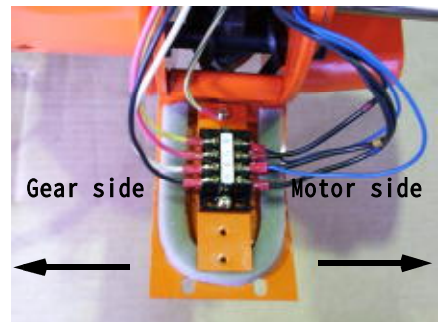
3. Lay (p/A560) Gasket for A29 on (p/A1) Gear box and coat with water resistant adhesive around (p/A30) Pipe.



4. Connect (p/A29) Switch holder with (p/A559) Cap bolts w/ seal. (Always use new bolts because A559 is coated with sealant.)



5. Pass (p/C635) Limit cables through (p/A30) Pipe to the side of (p/A29) Switch holder. Assemble the electrical unit on (p/C50) Switch board and install it to (A29) Switch holder with (p/C687) Cap bolts. Lace the wires of the electrical components through (p/A30) Pipe to the middle of (p/B1,B29) Gear- & Motor-side plates.



6. Run the lead wires of the electrical components through the open space above (p/B6) Load chain guide to the side of (p/B30-2) Body cover B. Connect both of Body covers B, i.e. B30-1 and B30-2 with (p/C682) Terminal board, then connect the wires on the terminal.



7. Put in (p/C694) Cord locks and set (p/C563) Power source cable and (p/C564) Pendant control cable into (p/A29) Switch holder. Follow the circuit diagram for the wiring.



8. Close (p/B30-1) Body cover B with (p/B542) Screws.



9. Close (p/B30-2) Body cover B while retaining (p/C563) Power source cable by (p/C34) Supporter for C563 over (p/C662) Protection pipe for C563.



10. Fix (p/C42) Supporting plate for C23 in its position.



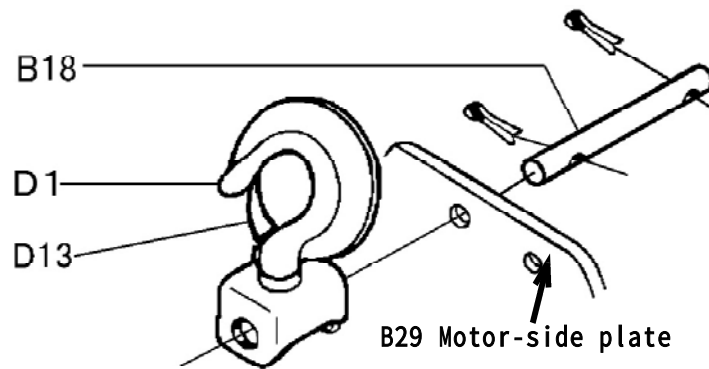
11. Connect one of (p/C23) Hanging plates for C533 to (p/C42) Supporting plate. Then hold (p/C564) Pendant control cable with the other (p/C23) Hanging plate for C533, and fix them so to hang them on (p/C42) Supporting plate for C23. While hang the end of the pendant cable protection wire to the bottom of C23.



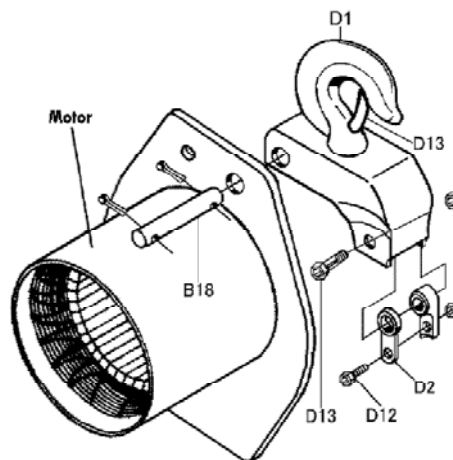
12. Connect the power to confirm the operation. Close the switch section with (p/C12) Switch cover over (p/C666) Gasket for C12 and tighten up (p/C667) Cap bolts if the assembled unit is perfect. (Have the trial within the stroke of the pilot chain and keep it being reeved through the load sheave.)

4 — 6 . Top hook assembly

• 0.5~3t Capacities



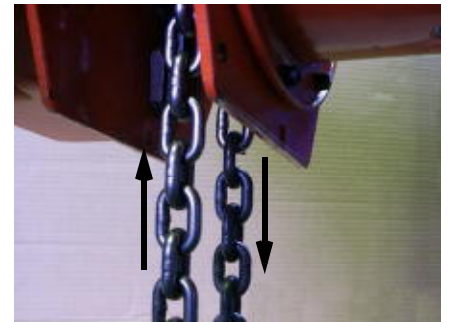
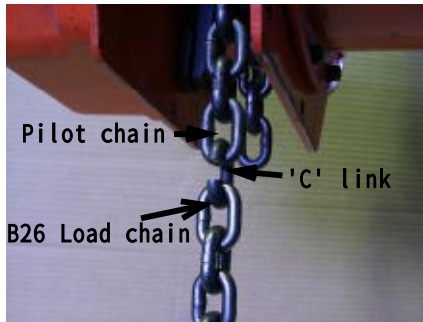
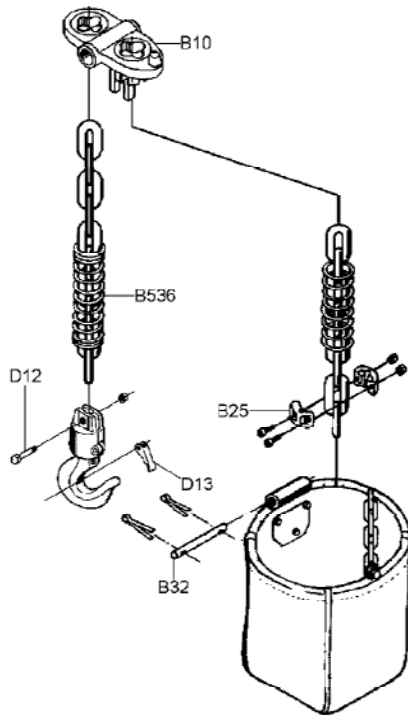
• 5t Capacity



- Be sure to grease to (p/B18) Top hook pin for assembly.
- Split (p/B514) Split pins at 60 degree.

4 — 7 . Load chain, Bottom hook assembly, Stop holder & Chain bucket assembly

• Load chain



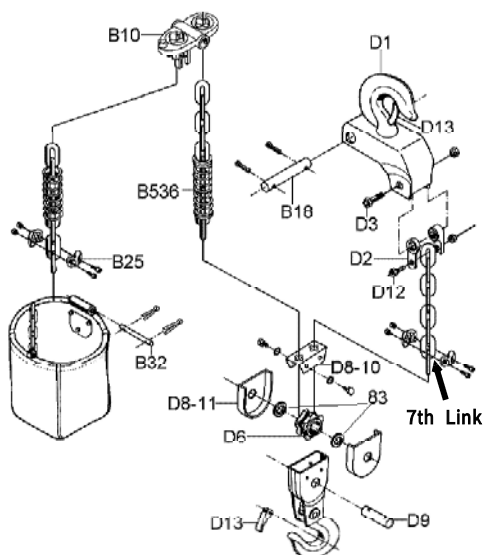
1. Joint (p/B26) Load chain to the loose-end side of the pilot chain using a 'C' link (open link).
2. Press 'DOWN' push button to feed (p/B26) Load chain into the unit then unjoint the pilot chain.

※Make sure the weld-abutment of the vertical links face to the opposite side of the load sheave center.

• Bottom hook assembly, Stop holder & Chain bucket assembly



3. Equip (p/B536) Tail springs to both the end of the load chain, then connect (p/D8) Bottom hook assembly with (p/D12) Bolt for D8 to the load side and (p/B25) Chain limit stop to the loose-end side.
4. Connect Chain bucket hanging chain to (p/B28) Hanging plate for B27 and couple (p/B27) Chain bucket to the unit inserting (p/B32) Chain bucket pin in its position. Then lock it with the split pins. The load chain must get into the the bucket from the end link in smooth order.



• Double chain-fall unit

1. Equip (p/B536) Tail spring to the load side of Load chain. At the same time make sure the first link at the loaded end is a vertical link.
2. Reeve Load chain through *(p/D8) Bottom hook assembly so that the weld-abutment of vertical links face to (p/D6) Tail wheel center.
3. Join Load chain end to (p/D2) Chain stop plate with (p/D12) Bolt for D8 and nut.
4. Connect (p/D2) Chain stop plates to (p/D1) Top hook assembly with (p/D3) Yoke pin (w/ Nut).
5. Connect (p/B25) Chain limit stop on the 7th link from the end as illustrated on the left.

※Bottom hook assembly

1. Attach (p/83) Tail wheel collars to (p/D6) Tail wheel then assemble to the bottom hook with (p/D8-11) Tail wheel guides B.
2. Grease to (p/D9) Tail wheel pin and insert to the position.
3. Fit (p/D8-10) Tail wheel guide A and fasten up with bolts.
(Slot it into the groove on (p/D9) Tail wheel pin as the photo given below.)



4 – 8 . Lubricant oil pouring



1. Coat to the thread section of (p/A537) Oil extractors with gasket, and plug on 2 points of (p/A1) Gear box. Then pour the lubricant oil after confirming all the bolts and nuts are tightened up firmly.
2. Plug the oil hole with (p/A505) Oil cap and make sure a depressurizing hole is being made on top of the cap.

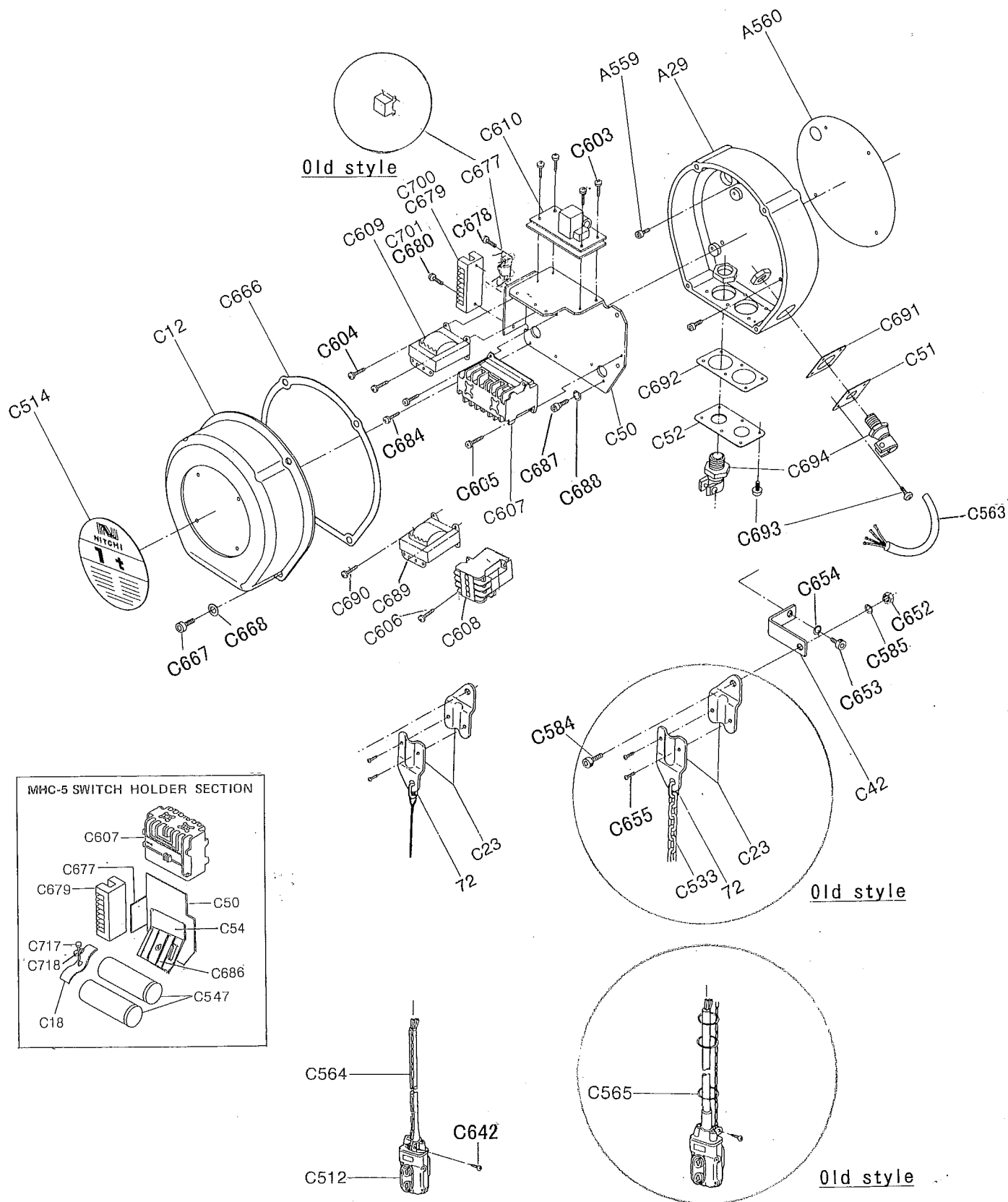
5. MH-5 Spare Parts List				Recommended Parts marked ★ is for Light Duty use and ☆ is for Heavy Duty use.						
	Part Number	Part Name	Nos. used	Part Code					Remarks	
				0.5t	1t	2t	3t	5t		
	A1	GEAR BOX	1	GMH5A001U		LMH5A001U				
	A2	PINION SHAFT	1	GMH5A002U JMH5A002U		LMH5A002U				
☆	A3	PINION GEAR	1	GMH5A003		LMH5A003				
	A4	SECOND PINION	1	GMH5A004	JMH5A004	LMH5A004	MMH5A004	PMH5A004	Old style is Discontinued	
	A5	SECOND PINION GEAR	1	GMH5A005	JMH5A005	LMH5A005	MMH5A005	PMH5A005		
	A6	THIRD PINION	1	MH4005A06		LMH5A006				
	A7	LOAD GEAR	1	MH4005A07		MH4020A07				
☆	A13	DISC HUB () shows old style	1	(MH4005A13)/GMH5A013		(MH4020A13)/LMH5A013				Old style is Discontinued
☆	A14	RATCHET WHEEL	1	MH4005A14		MH4020A14				
	A15	CHECK WASHER () shows old style	1			(MH4005A15)/GMH5A015				Old style is Discontinued
	A16	PAWL	1	GMH5A016		MH4020A16				
	A28	BRAKE SUPPORTING PLATE	1	MH4005A28T		LMH5A028T				
	A29	SWITCH HOLDER	1	GMH5A029		LMH5A029				
	A30	PIPE	1	MH4005A30		LMH5A030				
☆	A501	O-RING	1	MH4005A501		MH4020A501				
	A505	OIL CAP	1			MH4005A505				
	A507	BALL BEARING	1	B6202ZNR				B6303ZNR		
	A508	ROLLER BEARING	1	T153511						
		NEEDLE BEARING	1	-				T204725ZNR		
	A509	BALL BEARING	1			B6303NRZ				
	A510	RETAINING RING	1	SRC5140				SRC5145		
	A513	RETAINING RING	1	SRC5124				SRC5130		
☆	A514	FRICITION DISCS	1set	MH4005A514				MH4020A514		
				MH4005A515				MH4020A515		
	A519	CAP BOLTS	8(9)	CBM6×10				CBM8×10		() is applied to 5t
	A523	SPRING WASHER	10	SWM6				SWM8		
	A530	PAWL SPRING	1	MH4005A530				MH4020A530		
	A531	RETAINING RING	2	SRC5116				SRC5118		
	A537	OIL EXTRACTOR PLUG	2			TPO.25				
	A553	BALL BEARING	1	B6202ZNR				B6302ZNR		
	A554	BALL BEARING	1	B6202ZNR				B6303ZNR		
	A556	NUTS	3	HN1M8				HN1M10		
	A557	SPRING WASHER	3	SWM8				SWM10		
	A558	SPRING PINS	2			SPP6×10				
☆	A559	CAP BOLT W/SEAL	4	MH4005A559				-		
			7	-				MH4005A559		
☆	A560	GASKET FOR A29	1	GMH5A560				LMH5A560		
	A561	RING FOR BEARING	1	GMH5A561				-		
	A562	CAP BOLTS	2(1)	CBM6×18				CBM8×18		() is applied to 5t
	Part Number	Part Name	Nos. used	Parts Code					Remarks	
				0.5t	1t	2t	3t	5t		
	B1	GEAR-SIDE PLATE	1	GMH5B001S				LMH5B001S		
	B1-3	STAY BOLT B	1	-				MH4020B013		
	B1-4	STAY PIPE A	3	MH4005B014				MH4020B014		
☆	B4	LOAD SHEAVE	1	GMH5B004				LMH5B004		
	B5	COLLAR FOR B4	1	MH4005B05				MH4020B05		
☆	B6	LOAD CHAIN GUIDE	1	GMH5B006				LMH5B006		
☆	B10	HANDLE	1	GMH5B010				LMH5B010		
☆	B18	TOP HOOK PIN	1	MH4005B18				MH4020B18		
☆	B25	CHAIN LIMIT STOP	1	MH4005B25		MH4020B25		-		
			2			-		MH4020B25		
☆	B26	LOAD CHAIN	1			CT-7.1		CT-11.2		
★☆☆	B27	CHAIN BUCKET	1	CT-7.1		NO.1-NO.5 & S1-S7				Refer to the Operating Handbook
	B28	HANGING PLATE FOR B27	1	MH4005B28				MH4020B28		
	B29	MOTOR-SIDE PLATE	1	GMH5B029U				LMH5B029U		
	B29-2	BODY COVER A	1	GMH5B029T				LMH5B029T		
	B30-1	BODY COVER B	1	GMH5B030T1				LMH5B030T2		
	B30-2	BODY COVER B	1	GMH5B030U				LMH5B030U		
	B32	CHAIN BUCKET PIN	1	MH4005B32				MH4020B32		
	B35	STAY PIPE B	1	MH4005B35						
☆	B36	LIMIT LEVER	1	MH4005B36T				MH4020B36T		
	B38	CHAIN GAUGE	1	GMH5B037U1				LMH5B037U2		
☆	B501	RUBBER SEAL	1			MH4005B501				
	B502	OIL SEAL	1	SC426512				SC487012		
☆	B503	OIL SEAL FOR B4	1			SC25408				
☆	B506	BALL BEARING	1			B6305ZC3D4M				
	B507	BALL BEARING	1	B6208Z				B6209Z		
	B508	NEEDLE BEARING	1			TA5025				
	B509	RETAINING RING	1	SRC5080				SRC5085		
	B514	SPLIT PINS	2	SP5×30				SP5×40		
	B522	CAP BOLTS	2			CBM6×30		-		
			4			-		CBM6×30		
	B523	LOCK NUTS	2			HNN1M6				
			4			-		HNN1M6		
	B533	RETAINING RING	1			SRC5062				
☆	B536	TAIL SPRINGS	2	MH4005B53E				MH4020B53E		
☆	B537	SPRINGS FOR B6	2	MH4005B53F				MH4020B53F		
	B538	NUTS	4	HN1M12				-		
			5	-				HN1M14		
	B539	SPRING WASHER	4	SWM12				-		
			5	-				SWM14		
	B540	CAP BOLT	1	CBM6×15		CBM8×18		-		Old style
	B541	SPRING WASHER	1	SWM6		SWM8		-		Old style
	B542	SCREWS	4			CMSM6×15		-		
			2			-		CMSM6×15		
	B545	CAP BOLT	1			CBM6×20				
	B546	NUT	1			HNN1M6				
	B550	SPRIT PINS	2			SP3×20				
	B566	RETAINING RING	1			SRC5122				
☆	B567	SUPPORTING SPRING	1	-				MH4020B567		
	B568	CAP BOLT	1	-				CBM12×35		
	B569	SPRING WASHER	1	-				SWM12		
	B572	CAP BOLT	1	CBM8×10				CBM8×12		
	B573	SPRING WASHER	1			SWM8				
	B574	BOLT	1	HBBM12×100				-		

	Part Number	Part Name	Nos. used	Parts Code					Remarks
				0.5t	1t	2t	3t	5t	
	C1	MOTOR COVER	1	GMH5C001		LMH5C001			
☆	C3	STATOR FOR MOTOR	1	200V GMH5C003S Dual	200V JMH5C003S Dual	200V LMH5C003S			
			1	GMH5C003ST	JMH5C003ST	Dual LMH5C003ST			
				400V GMH5C003SB	400V JMH5C003SB	400V LMH5C003SB			
★☆☆	C4	BRAKE WHEEL	1	GMH5C004U		LMH5C004U			
	C12	SWITCH COVER	1	GMH5C012		LMH5C012			
	C23	HANGING PLATE FOR C533	2	MH4005C23T					
	C27	LIMIT SWITCH COVER	1	GMH5C027					
	C32	LIMIT SWITCH PLATE	1	MH4005C32					
	C34	SUPPORTER FOR C563	1	MH4005C34		MH4020C34			
	C42	SUPPORTING PLATE FOR C23	1	MH4005C42					
	C44	MOTOR FLANGE	1	GMH5C044		LMH5C044			
☆	C45	SHIELD	1	GMH5C045		LMH5C045			
	C46	BRAKE BASE PLATE	1	(GMH5C046T)		(LMH5C046T)			Discontinued
	C47	ARMATURE	1	(GMH5C047)		(LMH5C047)			Discontinued
	C48	BRAKE COIL	1	(GMH5C048U)		(LMH5C048U)			Discontinued
	C49	PIPE FOR LEAD WIRE	1	GMH5C049	JMH5C049	LMH5C049			
	C50	SWITCH BOARD	1	GMH5C050		LMH5C050			
	C51	CONNECTING PLATE FOR C563	1	GMH5C051					
	C52	CONNECTING PLATE FOR CABLE	1	GMH5C052					
★☆☆	C59	BRAKE UNIT	1	NFHA1-029C		NFHA1.5-008C			
	C59-5	BRAKE COIL	1	GMH5C0595		LMH5C0595			
☆	C512	PUSH BUTTON	1	Refer to the type shown in the circuit diagram					
	C514	NAME PLATE	1	GMH5C514	JMH5C514	LMH5C514	MMH5C514	PMH5C514	
	C524	SCREWS	3	CMSM5×8					
	C525	CAP BOLT	1	CBM8×15					
	C533	SUPPORTING CHAIN FOR C564	1	GMH5C533					Old style
	C553	BRAKE SPRING	3	(GMH5C553)		(LMH5C553)			Discontinued
	C560	BLIND BUSHING	1	LMH5C560					
	C563	POWER SOURCE CABLE	1	Refer to the type shown in the circuit diagram					
	C564	PENDANT CONTROL CABLE	1	Refer to the type shown in the circuit diagram					
	C565	RING	3	MH4005C565					Old style
	C584	CAP BOLTS	1	CBM8×18					
	C585	SPRING WASHER	1	SWM8					
	C603	SCREWS	4	CMSM4×12					
	C604	SCREWS	4	CMSM4×8					
	C605	SCREWS	()	CMSM4X15(2)		CMSM4X20(3)			
★☆☆	C607	ELECTROMAGNETIC CONTACTOR	1	HMUF1024		HMU1824			
★☆☆	C609	TRANSFORMER	1	TF301N*024		TF302N*024			* A:200V B:400V C:Dual
	C610	WARNING RELAY OF NEGATIVE PHASE	1	PR-2N (200V)		PR-4N (400V)	PR-24N (Dual)		
	C614	SPRING WASHER	1	SWM8					
	C615	SPRING PINS	2	SPP6×12					
	C619	WAVE WASHER	1	WW32		WW46			
	C626	SCREWS	2	CMSM4×8					
	C628	CAP BOLTS	2	CBM6×35					
	C629	SPRING WASHERS	2	SWM6					
	C630	CAP BOLTS	2	CBM6×30					
★☆☆	C634	LIMIT SWITCH	1	LS-61-1					
	C635	LIMIT CABLE	1	GMH5C635		LMH5C635			
	C638	SCREWS	1	CMSM4X15					
	C639	NUT	1	HN1M4					
	C640	SPRING WASHER	1	SWM4					
	C642	SCREWS	1	CMSM5×20					
	C652	NUT	1	HN1M8					
	C653	CAP BOLT	1	CBM8×12					
	C654	SPRING WASHER	1	SWM8					
	C655	SCREWS	2	CMSM5×20					
	C657	SPRING WASHERS	2	SWM6					
	C659	GASKET FOR MOTOR CASE	1	GMH5C659		LMH5C659			
	C662	PROTECTION PIPE FOR C563	1	GMH5C662		LMH5C662			
	C664	THROUGH BOLTS	4	GMH5C664	JMH5C664	LMH5C664			
	C665	SPRING WASHERS	4	SWM5					
☆	C666	GASKET FOR C12	1	GMH5C666		LMH5C666			
	C667	CAP BOLTS	4	CBM6×10					
	C668	SPRING WASHERS	4	SWM6					
☆	C669	BALL BEARING	1	B6204ZZC3D4M		B6206ZZC3D4M			
	C671	CAP BOLTS	3	(CBM6×50)		(CBM8×55)			Discontinued
	C673	ADJUSTING NUTS FOR BRAKE	6	(HUN1M6L)		(HUN1M8L)			Discontinued
	C674	CAP BOLTS	3	CBM6×15		CBM6×18			
	C675	SPRING WASHERS	3	SWM6					
	C676	BUSHING FOR LEAD WIRE	1	GMH5C676					
★☆☆	C677	RECTIFIER	1	RF-2A					
	C678	SCREWS	2	CMSM4×15					
	C679	TERMINAL BOARD	1	TS-615 8P					
	C680	SCREWS	2	CMSM4×10					
	C681	BUSHING FOR MOTOR LEAD WIRE	1	GMH5C681					
	C682	TERMINAL BOARD	1	TS-615 4P					
	C683	SCREWS	2	CMSM4×10					
	C684	SCREWS	1	CMSM4×8					
	C687	CAP BOLT	4	CBM6X10					
	C688	SPRING WASHERS	4	SWM6					
	C691	GASKET FOR C51	1	GMH5C691					
	C692	GASKET FOR C52	1	GMH5C692					
	C693	SCREWS	8	CMSM5×8					
	C694	CORD LOCKS	2	NC-1					
	C700	TERMINAL BOARD	1	TS-615 10P					Dual only
	C701	SCREWS	2	CMSM4X10					Dual only
	C702	TERMINAL BOARD	1	TS-615 8P					Dual only
	72	SAFETY LINK	1	GMH5-72					

	Part Number	Part Name	Nos. used	Parts Code					Remarks	
				0.5t	1t	2t	3t	5t		
	D1	TOP HOOK ASSEMBLY	1	MH4005D01T	MH4010D01T	LMH5D001U	MMH5D001U	MH4050D01T		
	D2	CHAIN STOP PLATE	1			-		HH4100040		
☆	D3	YOKE PIN (W/NUT)	1					MH4030D03		
	D6	TAIL WHEEL	1					PMH5D006T		
★☆☆	D8	BOTTOM HOOK ASSEMBLY	1	GMH5D008U	MH4010D08X	LMH5D008U	MH4028D08X	PMH5D008U		
☆	D9	TAIL WHEEL PIN	1			-		MH4030D09		
★☆☆	D12	BOLT FOR D8	1	HH4005048			HH4030048			
★☆☆	D13	SAFETY LATCH ASSEMBLY (TOP)	1	HH4010074T	HH4015074T	HH4015074T	HH4030074T	HH4050074T		
★☆☆	D13	SAFETY LATCH ASSEMBLY (BOTTOM)	1	HH4005074T	HH4010074T	HH4015074T	HH4030074T	HH4050074T		
☆	D8-10	TAIL WHEEL GUIDE A	1			-		PMH5D008A		
☆	D8-11	TAIL WHEEL GUIDE B	2			-		PMH5D008B		
☆	83	TAIL WHEEL COLLARS	2			-		HH4100083		
Spare Parts only for MHT-5										
	Part Number	Part Name	Nos. used	Parts Code					Remarks	
				0.5t	1t	2t	3t	5t		
	A2	PINION SHAFT	1	GMT5A002U		LMT5A002U	PMT5A002U			
	A3	PINION GEAR	1	GMT5A003		LMT5A003	PMT5A003			
	A4	SECOND PINION	1	JMH5A004	JMT5A004	LMT5A004				
	A5	SECOND PINION GEAR	1	JMH5A005	JMT5A005	LMT5A005				
	A14	RATCHET WHEEL	1	MT4005A14		MT4020A14				
	A32	BEARING BUSH	1	MT4010A32		-				
	C3	STATOR FOR MOTOR	1	GMT5C003S		LMT5C003S				
	C49	PIPE FOR LEAD WIRE	1	GMT5C049		LMT5C049				
	C606	SCREWS	2			CMSM4X15				
★☆☆	C608	ELECTROMAGNETIC CONTACTOR	1	MUD72224				MUF102224		
	C609	TRANSFORMER	1			TF302N*024				* A:200V B:400V C:Dual
	C664	THROUGH BOLTS	4	GMT5C664				LMT5C664		
	C682	TERMINAL BOARD	1			TS-615 6P				
★☆☆	C689	TRANSFORMER	1			TF-301N(400/200V)				For brake(400V class)
	C690	SCREWS	4			CMSM4X8				For brake(400V class)
Spare Parts only for MHC-5										
	Part Number	Part Name	Nos. used	Parts Code		Remarks				
				0.5t	1t					
	A2	PINION SHAFT	1	GMC5A002U						
	A3	PINION GEAR	1	GMT5A003						
	A4	SECOND PINION	1	GMH5A004	JMC5A004	Old style is Discontinued				
	A5	SECOND PINION GEAR	1	GMH5A005	JMC5A005					
	A32	BEARING BUSH	1	MT4010A32						
	C3	STATOR FOR MOTOR	1	GMC5C003S						
☆	C4	BRAKE WHEEL	1	GMC5C004U						
	C18	CONDENSER HOLDING PLATE	1	GMC5C018						
☆	C20	ADJUSTING NUT FOR BRAKE	1	GMC5C020						
	C49	PIPE FOR LEAD WIRE	1	GMT5C049						
	C50	SWITCH BOARD	1	GMC5C050						
	C54	CONDENSER MOUNTING PLATE	1	GMC5C054						
	C59	BRAKE UNIT	1	NFHA1-026C		C59-5 is not available				
☆	C547	CONDENSER	2	GMC5C547						
	C555	CAP BOLT	2	CBM5X12						
	C556	SPRING WASHERS	2	SWM5						
	C664	THROUGH BOLTS	4	GMT5C664						
	C669	BALL BEARING	1	6303ZZC3D4M						
	C670	RUBBER WASHER	1	GMC5C670						
★☆☆	C677	RECTIFIER	1	RF-1A(100V) RF-2A(200V)						
	C682	TERMINAL BOARD	1	TS-615 6P						
	C686	RUBBER FOR CONDENSER	1	DEC30853						
	C717	CAP BOLT	1	CBM6X70						
	C718	SPRING WASHER	1	SWM6						
☆	C719	LOCK NUT	1	FU00SS						

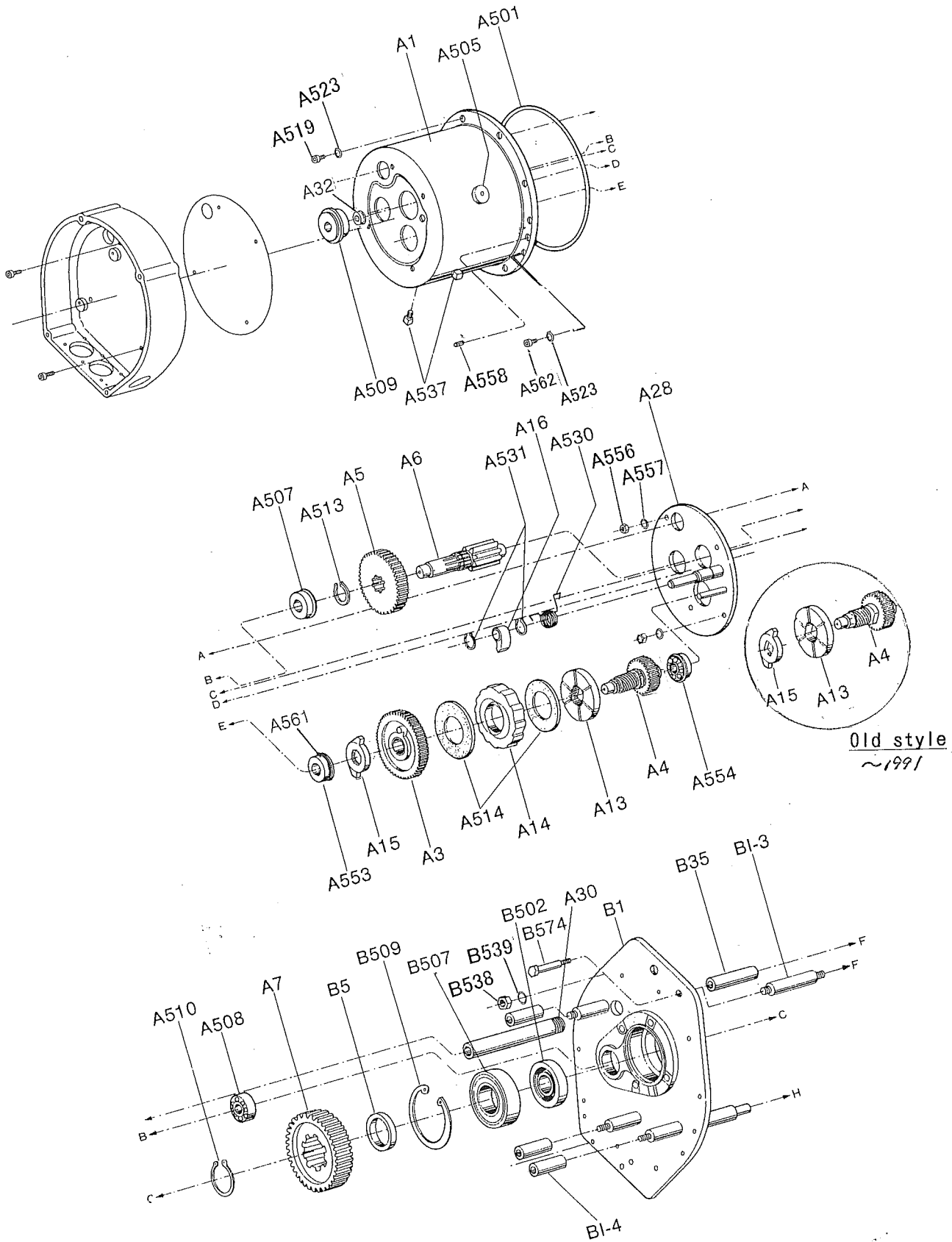
MH-5

SWITCH HOLDER SECTION



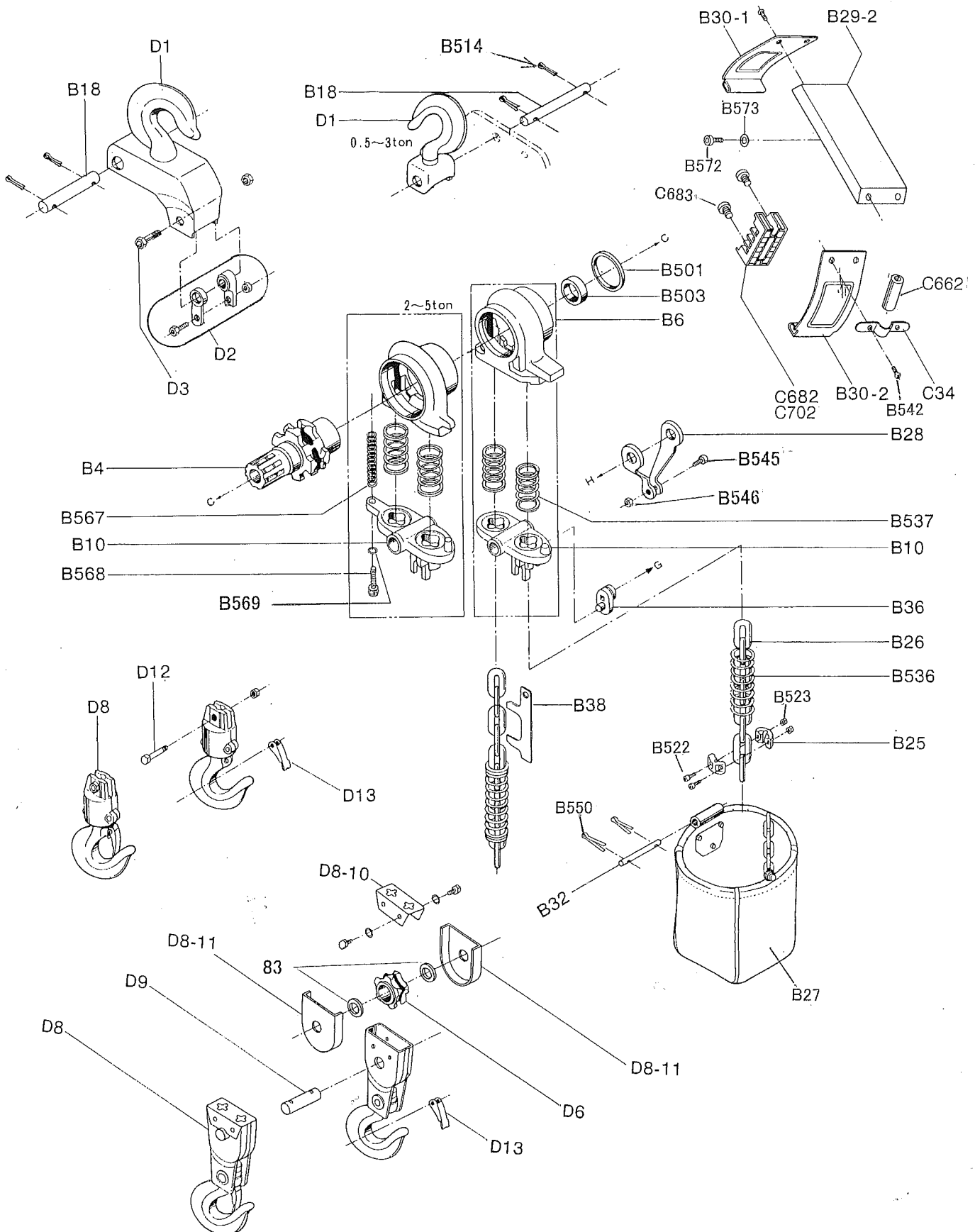
MH-5

GEAR BOX SECTION



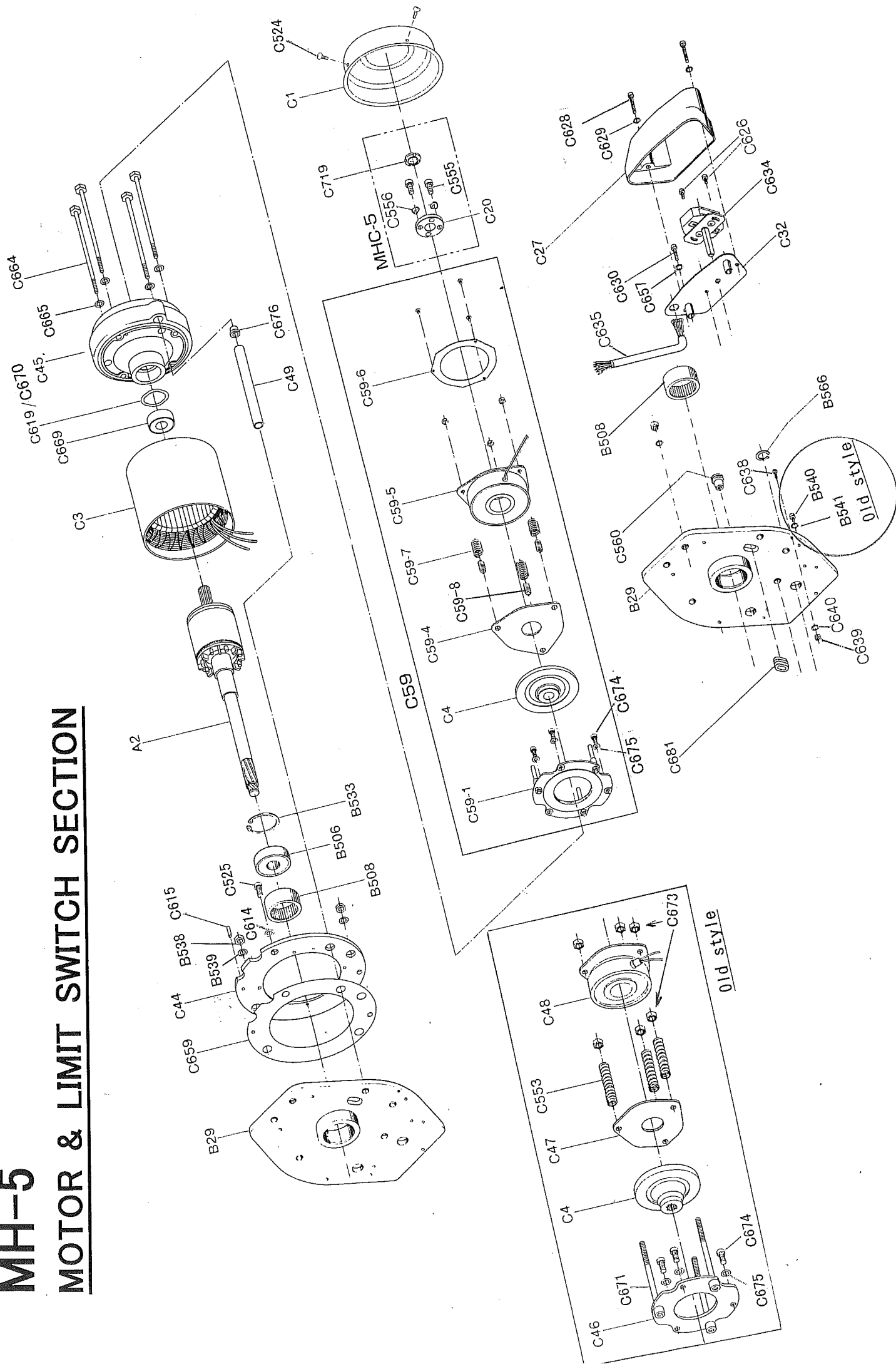
MH-5

HOOKS & LOAD CHAIN DRIVING SECTION



MH-5

MOTOR & LIMIT SWITCH SECTION





No.7-17, 4-CHOME, YOSHITA, HIGASHI-OSAKA, OSAKA, JAPAN 578-0924
<http://www.nitchi.co.jp/>

MH-5-001
(2007.11.30)

